Figure F1. Map of Site U1466, located in the Kardiva Channel 1880 m east of Site U1465.

Figure F2. Seismic Line P65 with locations and final penetration depths, Sites U1465, U1466, and U1468. A high-amplitude reflection marks the Oligocene/Miocene (O/M) boundary (Belopolsky and Droxler, 2004; Betzler et al., 2013b). The overlying flat reflections image the deposits of the early Inner Sea; the higher, slightly inclined reflections are the distal lobes of the prograding Kardiva platform to the west. Reflections above the green seismic horizon are current-controlled drift deposits with a moat between Sites U1465 and U1466. The mounded drift is capped by a sheeted drift package that reaches the seafloor. CDP = common depth point.

Figure F3. Lithostratigraphic summary, Holes U1466A and U1466B.

Figure F4. Solitary coral embedded in coarse-grained sediments (359-U1466A-2H-3, 54–72 cm). Scale bar in cm.

Figure F5. A = planktonic foraminiferal debris, B = pteropod fragments (359-U1466A-6H-CC; 52.25 mbsf).

Figure F6. Cemented aggregated grains in Unit III.

Figure F7. A = dolomite rhombs, B = aragonite needles, C = calcite crystals (359-U1466A-14H-2, 20 cm; plane-polarized light [PPL]; 111.70 mbsf).

Figure F8. Partially cemented skeletal wackestone (359-U1466A-22H-1, 123 cm; 123.30 mbsf): A = dogtooth calcite rim around benthic biserial foraminifer, B = echinoid spine.

Figure F9. Fine-grained wackestone with abundant bioclasts with moldic porosity (359-U1466A-18X-1, 7–9 cm; 138.89 mbsf). Most cements are quartz with minor microgranular calcite. Organic matter is also present. A = PPL, B = cross-polarized light (XPL).

Figure F10. Organic material (359-U1466A-25H-1, 49 cm; 181.99 mbsf; PPL and XPL): A = organic matter, B = aragonite crystal, C = dolomite rhomb, D = calcite crystal.

Figure F11. Fine-grained packstone with common planktonic and benthic foraminifers with moldic porosity (359-U1466A-23H-1, 41–43 cm; 171.91 mbsf; PPL and XPL). Most components are recrystallized and partially infilled: A = microgranular calcitic cements, B, E = acicular to fibrous calcite, C, D = dogtooth cements.

Figure F12. Very fine grained packstone to wackestone with abundant bioclasts and some planktonic and benthic foraminifers in a recrystallized micritic matrix (359-U1466A-37X-1, 108–110 cm; 231.68 mbsf; PPL and XPL). Most components are preserved.

Figure F13. Medium-grained packstone with abundant planktonic (white arrows) and benthic foraminifers (e.g., green arrow = miogypsinids, red arrow = *Heterostegina* sp., blue arrow = *Lepidocyclina* sp., yellow arrow = *Amphistegina* sp.) and abundant bioclasts in a dense to clotted micritic matrix (359-U1466A-44X-2, 96–99 cm). Microgranular calcitic cements occur in some bioclasts.

Figure F14. Fine-grained packstone with common planktonic foraminifers, a few benthic foraminifers, some mollusk fragments, and abundant bioclasts in a micritic, partially recrystallized, and dolomitic matrix (359-U1466A-50X-CC, 30–33 cm; 317.72 mbsf).

Figure F15. Recrystallized packstone with fragments of planktonic specimens (359-U1466B-10R-2, 20 cm; 392.95 mbsf). The first few chambers are preserved within outer shell of the planktonic foraminifer (black arrow).

Figure F16. Plate showing main ichnotaxa, Hole U1466B. A. *Zoophycos* (Zo), *Thalassinoides* (Th), *Chondrites* (Ch), and *Planolites* (Pl) (32R-1, 38–48 cm). B. *Chondrites* inside of a *Thalassinoides* burrow (11R-1, 40–53 cm). C. *Planolites* (48R-1, 38–41 cm). D. *Palaeophycus* (Pa) (26R-1, 64–67 cm). E. *Phycosiphon* (Ph) (47R-3, 41–42 cm).

Figure F17. A = coccoliths, B = aragonite needles, C = calcite crystals (359-U1466B-13R-2, 83 cm; XPL; 423.13 mbsf).

Figure F18. A = tunicate fragment, B = echinoid fragment, C = pyrite-infilled planktonic foraminifer with calcite rim (359-U1466B-26R-1, 96 cm; 518.86 mbsf; PPL and XPL). D = coccoliths with cross-extinction lines, E = aragonite needles, F = calcite crystals.

Figure F19. Slumped interval (359-U1446B-50R-1; top = 731.40 mbsf).

Figure F20. Alternation of black organic-rich and white chalk alternation in Subunit VIIB (359-U1446B-56R-1 [top = 789.60 mbsf] and 56R-2).

Figure F21. Benthic foraminifers, Hole U1466B. Top = upcore. A. Base of turbidite with large benthic foraminifers oriented parallel to bedding (52R-3; TS 22). Note erosion surface in the middle of the figure. B. Red arrows = *Lepidocyclina* (*Eulepidina*) sp. (53R-1; TS 23). C. Red arrows = *Heterostegina* sp. (53R-1; TS 23). Green arrow = black slightly deformed lithoclast consisting of planktonic foraminifer–dominated mudstone. D. Organic layer with brown to black interval that shows compaction and recrystallization overlain and underlain by planktonic foraminifer–dominated wackestone (57R-CC; TS 24).

Figure F22. Organic material (359-U1466B-53R-1, 32 cm; 760.82 mbsf): A = organic residue (PPL), B = siliceous precipitate with undulating extinction binding organic material together (XPL).

Figure F23. Biostratigraphic and paleoenvironmental summary, Site U1466. Calcareous nannofossil and planktonic foraminifer biozonation is shown with paleoenvironmental information provided by benthic foraminifers and ostracods.

Figure F24. Age-depth profile, Site U1466. Details of each event are given in Table **T2**.

Figure F25. Preservation. A. Late Pleistocene (359-U1466A-6H-CC). Very heavily overgrown specimen of *Discoaster pentaradiatus* (*D. p*) next to unaltered specimens of *Gladiolithus flabellatus* (*G. f*) and *Gephyrocapsa aperta* (*G. a*). B. Middle Miocene (19H-2, 123 cm). Sample from the Kadiva Drift showing characteristic mix of lozenge-shaped ascidian spicules (Asc), rhombic dolomite crystals (Dol), and sparse assemblage of small coccoliths (Cocco) including common *Umbilicosphaera jafari*. C, D. Early Miocene (359-U1466B-56R-2, 58 cm). Well-preserved coccolith ooze with high porosity from a dark interval with visible millimeter-scale lamination in the basal part of the recovered sequence. Assemblages are dominated by *Cyclicargolithus floridanus* but also include variable associations of other species. The lower magnification image (D) shows possible evidence of 10–20 µm microlamination.

Figure F26. Plate of selected planktonic foraminifers, Site U1466. 1. *Globigerinoides ruber* pink (two specimens on the left) and white (one specimen on the right). 2, 3. *Globorotalia limbata*. 4. *Orbulina suturalis*. 5, 6. *Globorotalia truncatulinoides*. 7. *Praeorbulina sicana*. 8. *Dentoglobigerina altispira*. 9. *Pulleniatina obliquiloculata*. 10, 11. *Paragloborotalia kugleri*. 12. *Globigerinatella insueta*. 13. *Globigerinoides fistulosus*. 14, 15. *Fohsella fohsi*. Scale bars = 250 µm, except where otherwise indicated.

Figure F27. Plate of Middle to Late Pleistocene ostracods, Site U1466. 1. *Loxoconchella* cf. *pulchra* McKenzie, 1967. 2. *Loxocorniculum* sp. 3. *Neonesidea* sp. A. 4. *Xestoleberis* sp. 5. *Bosasella elongata* (Hu, 1979). 6. *Paranesidea* sp. B. 7. *Krithe* sp. 8. *Bradleya* sp. 9. *Pistocythereis* sp.

Figure F28. Plate of early Pleistocene ostracods, Site U1466. 1, 2. *Bosasella elongata* (Hu, 1979). 3. Undetermined ostracod 1. 4. *Leptocythere*? sp. 5. *Caudites* sp. A. 6. *Caudites* sp. B. 7, 8. *Loxocorniculum* sp. 9. *Loxoconcha* sp. 10–12. *Bradleya* sp. 13, 14. *Xestoleberis* sp. 15. Undetermined ostracod 2. 16, 17. *Paracytheridea* sp. 18. *Tribelina sertata* Triebel, 1948. 19. *Cytheropteron* sp. A. 20. *Ornatoleberis* sp.

Figure F29. Plate of late Miocene to early Pliocene ostracods, Site U1466. 1. Undetermined ostracod 3. 2. *Bosasella* sp. 3. *Aurila* sp. 4. *Hemicytherura* sp. 5, 6. *Ambocythere*? sp. A. 7, 8. Undetermined ostracod 4. 9. *Ambocythere* ? sp. B. 10, 11. *Paracytheridea* sp. 12. *Cytheropteron* sp. B. 13. Undetermined ostracod 5. 14. Undetermined ostracod 6.

Figure F30. Plate of mudline sample, Hole U1466A. 1. Benthic foraminifer *Uvigerina hispida*. 2. Planktonic foraminifer *Globorotalia scitula*. 3, 4. Planktonic foraminifer *Bolliella adamsi*.

Figure F31. IW Cl^-, Na^+, and K^+ concentrations, Holes U1466A and U1466B.

Figure F32. IW Na^+ and Cl^- correlation, Holes U1466A and U1466B.

Figure F33. IW alkalinity, hydrogen (pH), and SO_4^{2-} concentrations, Holes U1466A and U1466B.

Figure F34. IW Ca^{2+}, Mg^{2+}, Sr^{2+}, and Li^+ concentrations, Holes U1466A and U1466B.

Figure F35. IW Mn, Fe, B, Ba^{2+}, and Si concentrations, Site U1466.

Figure F36. Carbonate and organic carbon contents, Site U1466.

Figure F37. Relative concentrations of aragonite, calcium, dolomite, and quartz measured using XRD, Site U1466. Depths of dolomite peaks are indicated.

Figure F38. Mg/Ca, Sr/Ca, Mn/Ca, and Fe/Ca in sediments, Site U1466.

Figure F39. Headspace methane and ethane concentrations, Site U1466.

Figure F40. IW Sr^{2+}/Ca^{2+}, Mg^{2+}/Ca^{2+}, Ca^{2+}/Cl^-, and Mg^{2+}/Cl^-, Site U1466.

Figure F41. NRM inclination, declination, and intensity, Hole U1466A.

Figure F42. NRM inclination, declination, and intensity, Hole U1466B.

Figure F43. Representative vector endpoint diagrams (Zijderveld, 1967) of magnetization directions for sediment samples through stepwise AF demagnetization, Site U1466. Samples reveal a stable component that decays toward the origin of the vector plot. Straight blue lines = ChRM component derived by PCA (Kirschvink, 1980).

Figure F44. Isothermal remanent magnetization, Hole U1466A. Saturation reached at fields lower that 300 mT indicates that magnetite or maghemite are the most important magnetic mineral. Sample 22H-6, 124 cm = 174.74 mbsf, 27H-2, 56 cm = 190.25 mbsf, 31H-2, 99 cm = 208.50 mbsf, 32H-2, 72 cm = 215.90 mbsf, 33H-2, 80 cm = 218.70 mbsf.

Figure F45. AMS, Hole U1466B. F = foliation, L = lineation. Although anisotropy is relatively weak, most samples show a prolate pattern, suggesting either a significant influence of bottom current on the orientation of magnetic particles or the influence of depositional slope.

Figure F46. NRM inclination of Fisher (1953) mean of each section and attempt of magnetostratigraphy interpretation, Hole U1466A. Polarity: black = normal, white = reversed, gray = uncertain.

Figure F47. Inclination of ChRM and magnetostratigraphy, Hole U1466B. Polarity: black = normal, white = reversed, dark gray boxes = possible normal chrons, light gray = possible reversal chrons. The chron boundary could not be defined precisely due to the absence of sample continuity.

Figure F48. NGR, bulk density, grain and dry density, porosity, and *P*-wave velocity, Site U1466. Erroneous low GRA density values are filtered out, and only the upper bounds of the values are displayed.

Figure F49. Color reflectance and magnetic susceptibility, Site U1466.

Figure F50. Thermal conductivity and sediment strength, Site U1466.

Figure F51. Logging operations, Hole U1466B.

Figure F52. Triple combo logs, Hole U1466B. Note that downhole logs are on the logging depth scale, and NGR and magnetic susceptibility (WRMSL and MSP) core data from Hole U1466A and core recovery are on the core depth scale. Small depth offsets between the two scales are usually on the order of a few meters. HRLA: R3 = medium resistivity, R5 = deepest resistivity, RT = true resistivity, modeled from all depths of investigation.

Figure F53. NGR logs, Hole U1466B. HSGR = standard (total) gamma ray, HCGR = computed (U-free) gamma ray.

Figure F54. Correction of downhole natural gamma ray for attenuation through the BHA using a multiplier of 5, Site U1466. Correlation of Hole U1466A core features to equivalent features in Hole U1466B log data is shown. HSGR = standard (total) gamma ray.

Figure F55. Seismic section of drowned Kardiva platform and onlap and burial by drift sequences, Site U1466. Dark blue line = horizon between platform and drift sequences.

Figure F56. Correlation of seismic, core, and log data, Site U1466. Seismic Line 65 (M74) is shown with bases of platform and drift sequences. PWC = velocity measured on half cores and discrete samples. Interval velocity = model for time-depth conversion.

Figure F57. Time-depth conversion, Site U1466.